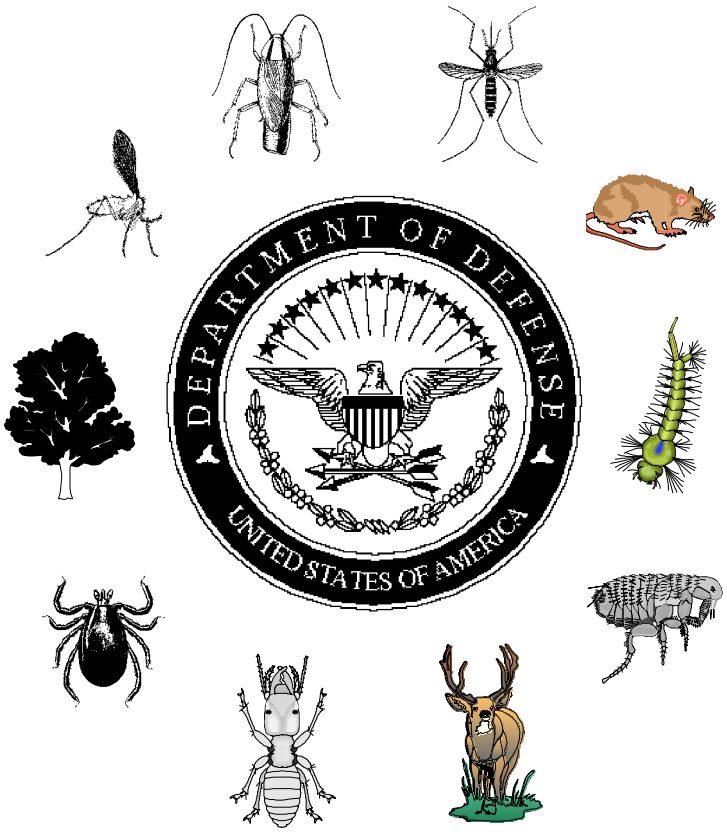
OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR ENVIRONMENTAL SECURITY

TECHNICAL INFORMATION BULLETIN

ARMED FORCES PEST MANAGEMENT BOARD
DEFENSE PEST MANAGEMENT INFORMATION ANALYSIS CENTER



JAN-FEB 1997

DEFENSE PEST MANAGEMENT INFORMATION ANALYSIS CENTER
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TECHNICAL INFORMATION BULLETIN (TIB) RECIPIENTS: The TIB is published by the Defense Pest Management Information Analysis Center to provide current information of interest to the DoD pest management community. Comments, questions, and contributions are welcome. Please send them to: Chief, DPMIAC/AFPMB, Forest Glen Section, WRAMC, Washington, DC 20307-5001, or call Tel: (301) 295-7479, Fax: (301) 295-7483, DSN Prefix 295. Reference to a commercial product or source in the Bulletin does not constitute DoD or AFPMB endorsement, unless specifically stated as a recommendation for DoD personnel. The Secretary of Defense has determined that publication of this periodical is necessary in the transaction of the public business, as required by law of the Department of Defense

ANNOUNCEMENTS

AFPMB/DPMIAC Activities

- **AFPMB Directorate and Support Have a Moving Experience.** During the week of February 10-14, 1997, the AFPMB Directorate and staff moved from Buildings 101 and 185 to Building 188 (next to DPMIAC on Linden Lane) at the Forest Glen (Maryland) Annex of the Walter Reed Army Medical Center. Moving to the "new" building were the Executive Director, Assistant Executive Director, Contingency Liaison Officer, Environmental Biologist, NCOIC, Administrative Officer, Secretary and Office Automation Clerk. The mailing address, voice mail and fax numbers, as well as e-mail numbers are unchanged. If you send us any "presents" by overnight delivery, the address recognized by commercial carriers is 2761 Linden Lane, Silver Spring, MD 20910-1213.

The AFPMB enjoyed 30 years in building 101, despite several serious plumbing failures and leaks that caused extensive damage. The move to building 188 provides more suitable "temporary" accommodations until Building 172 (near the PX gas station) is available, presumably in 1999.

From outside, Building 188 is an unremarkable, 50-year-old, single-story cinder block structure, with a strong family resemblance to DPMIAC's Building 187. But it has been freshly painted inside and out, has new carpets and drapes, and is clean. There is a lot more office and storage space than before and attractive meeting rooms for committees. The overhead lighting is bright, windows are plentiful and, so far, all utilities work. Just look for the concrete lion against the south wall, park in the lot across Linden Lane, and come on in. ---- COL Harvey Schultz

INTEGRATED PEST MANAGEMENT

IPM Methods Wall Chart Available. Mr. William Gebhardt, NAVFACHQ, has produced a handy wall chart of IPM methods that can be obtained free by sending a written request to DPMIAC/AFPMB, ATTN: Mary Trutt, Forest Glen Section, Walter Reed Army Medical Center, Washington, DC 20307-5001, or e-mail request to <cornelja@acq.osd.mil> or <lawyerpg@acq.osd.mil> ---- COL Lawyer, DPMIAC.

AFPMB Technical Information Memorandum (TIM) No. 39 - Progress Report. Believe it or not, a final draft of TIM No. 39, "Guidelines for Preparing Pest Control Contracts," is now in preparation. The draft is being critically reviewed and should soon go to press.

This TIM is of particular significance in view of the fact that DoD has committed itself to reducing pesticide use by 50% by the end of FY 2000 (using 1993 as a baseline) and because so much of our pest control work is contracted. Most contracts fall short of encouraging integrated pest management (IPM) techniques that reduce reliance on pesticides. Specification writers at activities currently lack adequate tools to select contract vehicles and to develop specifications that will reduce pesticide use.

TIM 39 was developed by a 7-person sub-committee of the AFPMB Real Property Protection Committee that was chaired by Mr. Harvey Shultz, Director of NAVFAC-NorthDiv's Environmental Sciences Division. The brief hard-copy basic document contains information that can be used by activity people to develop smarter pest control contracts. A pair of technical enclosures, each over 100 pages long, will be included as disks or a CD ROM. The first enclosure is an IPM-oriented Guide Performance Work Statement (GPWS), which activity specification writers can use to tailor pest control specifications. The second is a just-published USAF Model Pesticide Reduction Plan. The plan provides a compendium of available IPM materials and methods that can be incorporated into DoD pest control contracts. ---- COL Lawyer.

Birds and Behavioral Ecology at JFK - Flocks of birds have long been a problem at airports, but perhaps nowhere in the United States has the threat to civil aviation been worse than at New York City's John F. Kennedy International Airport, which adjoins the vast

Jamaica Bay Wildlife Refuge and lies at the confluence of two major migration flyways. In a desperate effort to reduce bird strikes with aircraft, shooters from the U.S. Department of Agriculture have killed about 60,000 birds at JFK over the last six years. But in 1996 a remarkable "green" initiative led by Steven Garber, a wildlife biologist with the Port Authority of New York and New Jersey, cut the number of birds that had to be shot to just 2,000. Using three gyrfalcon-peregrine falcon hybrids and three Harris's hawks trained to make several daily flights over the area, Garber has been able to frighten away most birds--including laughing gulls, the biggest troublemakers. Garber also creates the illusion of a catch by giving his raptors dead gulls to feed on and by playing tapes of gull distress calls. The birds of prey terrorize but are trained not to catch gulls. "The falcons killed nothing all summer long," says Garber. "But the [gulls] don't know that. They [only] know that the falcons mean business."

Between June and October 1995, 57 dead gulls, thought to have been sucked into engines or killed by engine wash, were found near JFK's runways. During the same period in 1996, with falcons and hawks patrolling, that number fell to 26, as reported by Garber in the *Journal of the International Civil Aviation Organization*. In just two years, the total number of birds hitting planes fell from 189 to 73. Garber next wants to try a larger predator, such as a golden eagle, to see whether it can scare off larger birds like Canada geese, which flock to JFK during the Fall hunting season, apparently to escape hunters.----Science 275(5299): 487; 24 JAN 97.

RESERVE COMPONENT ISSUES AND ANSWERS

This is the first of what hopefully will be a regular column in future TIBs - a section devoted entirely to issues of interest to Reserve Component pest management professionals. In addition to announcements of RC policy-related matters , this section can also serve as a forum for other information (e.g. unit vacancies, promotions, training opportunities or potential mission assignments) that you "in-the field" may wish to share with your AC and RC colleagues. Please send comments or inquiries with respect to this column to Dr. Steve Bennett (LTC, USAR) at (410) 671-1565; DSN 584-; FAX - 1680.

PMP Subdirectory for RCPMPs - Last September, as part of DPMIAC's effort to update the Directory of DoD Pest Management Professionals, RC officers from all components were surveyed for current information with respect to component and unit affiliations, rank and mailing addresses. Past directories have been inaccurate or incomplete about such information, making it difficult for active component and RC officers and advisors to communicate effectively about AFPMB business. A draft RC subdirectory was prepared but was not included in the FY 97 directory because of Privacy Act concerns about listing home addresses and phone numbers without prior written consent. As a result, RC officers will soon be contacted to review their proposed subdirectory listings and to authorize publication in future Directories. Once approvals are received, the RC subdirectory will be distributed DoD-wide.

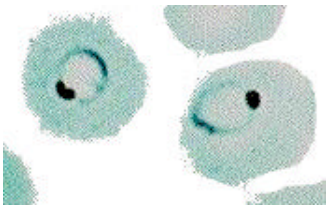
DoD Triennial Pest Management Workshop - Scheduled for early 1998, subject workshop will be here before you know it. This meeting should offer a useful forum to address RC training needs and readiness issues. We plan to invite speakers who are able to address these issues authoritatively, and we encourage your suggestions about agenda topics as well as ways to encourage attendance by RC pest management professionals.

Photos, Anyone? It's unfortunate but true that many of us RCPMPs are unknown to one another. The aforementioned subdirectory will help to remedy this somewhat, but another idea (COL Lawyer's, actually) would be to establish a "picture board" of RC officers of the type that component consultants use to manage (and recognize!) their active component personnel. Photos needn't be expensive, but should be fairly recent and should show you in military (preferably Class A) uniform. Color

Xeroxes of recent official photographs would do nicely. If interested in being "boarded," please send copies to Dr. Bennett or COL Lawyer.

MEDICAL ENTOMOLOGY

Attacking African Malaria - Shortly after New Year's, about 100 scientists and public health specialists from around the world gathered in Dakar, Senegal, to launch what may become a new, coordinated attack on malaria in Africa, with emphasis on building African research infrastructure. The meeting was funded by the biggest of the big names in global biomedical research: the U.S. National Institutes of Health, France's Institut Pasteur, Britain's Medical Research Council and Wellcome Trust, the Commission of the European Communities, and the World Health Organization. However, the impetus came from NIH Director Harold Varmus and Institut Pasteur Director Maxime Schwartz, both of whom have developed a strong interest in this cause. "Malaria is so damn important," says Varmus, that it is "the obvious thing to focus on" if one wants to make an impact in Africa.



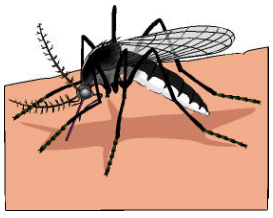
If followed by cash, this effort could reinvigorate malariology. According to WHO, each year more than 500 million people are infected with malaria and more than two million--mostly children in sub-Saharan Africa--die of the disease. Meanwhile, the ever-expanding threat of drug-resistant malaria continues to motivate the search for a vaccine, such as one just developed by the U.S. Army and SmithKline Beecham that worked well in a preliminary test at the Walter Reed Army Institute of Research in Washington, DC. A synthetic concoction based on a surface protein of the lethal malarial organism *Plasmodium falciparum* protected six of seven people from infection after they had been repeatedly bitten by anopheline mosquitoes carrying live parasites. But many vaccine projects have failed despite promising starts, and this one is still in its earliest stages.

All the more reason, say the leaders meeting at Dakar, for outside agencies to aggressively remove barriers to scientific communication in Africa.---- Science 275(5298): 299; 17 JAN 97.

Cases of Dengue Fever Nearly Double in the United States - Dengue fever, an acute, sometimes fatal, febrile disease caused by flaviviruses that occur in four serotypes and transmitted by the mosquito *Aedes aegypti*, substantially increased in the United States during 1995 as more travelers returned home from tropical areas of the world, where the disease is endemic. In 1995, dengue outbreaks were reported from many countries in Central America and the Caribbean; as a result, the number of laboratory-confirmed cases reported to the U.S. Centers for Disease Control and Prevention during that year jumped to 86, almost twice the average number of 45 cases per year reported between 1987 and 1994.

Serum samples from 441 people, representing 31 states and the District of Columbia, with suspected dengue and onset in 1995 were submitted to the CDC for testing. Of these, 79 cases from 21 states were serologically orvirologically diagnosed as dengue. Seven additional laboratory-positive cases were reported by the Texas Department of Health, largely as a result of intensified surveillance along the border with Tamaulipas, Mexico, site of a dengue epidemic. Of the 86 victims, 44 were female. Ages were reported for 54 people and ranged from 1 to 73 years. The virus serotype was identified in five cases. Travel histories were available for 81 people and indicated that infections were probably acquired in the Caribbean (48 people), Mexico and Central America (24), Asia (5), South America (3), and Africa (1). Clearly, anyone contemplating a trip to the tropics should avoid mosquito habitats and resting areas and should be prepared to make liberal use of repellents and bed nets.----Infectious Disease News 10(1): 15, JAN 97.

***Aedes albopictus* Overwinters in New Jersey -** In 1995, the Asian tiger mosquito, *Aedes albopictus*, established itself in both northern and southern New Jersey. The first record came from the town of Keyport, along Raritan Bay in northern Monmouth County, where larvae were found in various containers over an area of about 1 km^2. Later that summer, breeding populations were also detected along Delaware Bay in Cumberland and Salem Counties. When *Ae. albopictus* first entered the southern United States, it was estimated that the 0°C daily mean January isotherm would mark its northernmost limit for overwintering and that the -5°C daily mean January isotherm would delimit its summer expansion range. But though the collections of *Ae. albopictus* from southern New Jersey fall well below the



suggested northern limit, the Keyport site is very close to the point where the 0°C daily mean January isotherm crosses the Northeast seaboard. Indeed, local weather station data indicate that Keyport may be above the limit, since its normal daily mean January temperature approaches -1°C.

Sampling during the following Spring revealed that *Ae. albopictus* had, in fact, overwintered in both northern and southern New Jersey. On 10 May 1996, a single first-instar larva was found in a Keyport tire that also contained large numbers of third and fourth instar *Aedes atropalpus*. When the site was revisited on 28 May, additional *Ae. albopictus* larvae were found and adults were on the wing attempting to bite. On 23 May, *Aedes albopictus* larvae were collected from several tires at Pennsville, in Salem County just south of the Delaware Memorial Bridge. Adult mosquitoes were seen at this site, but none could be collected for identification.

At both ends of the state, the 1996 larval populations were sparse compared with the previous summer. Very few sampled containers harbored larvae, and larval numbers in positive containers were quite low. However, these records show that *Ae. albopictus* was able to survive one of the most severe winters in New Jersey history, and it is likely that this species will expand its range in New Jersey during the summer of 1997.----Tiger Tales 7(1): 14, NOV 96.

Chagas' Disease in Retreat - Across Latin America, organized programs to control Chagas' disease are advancing, according to Dr. Gabriel Schmunis, coordinator of the Pan American Health Organization's communicable diseases program. Since 1991, PAHO has been coordinating a Chagas' disease eradication campaign in the Southern Cone countries of Argentina, Bolivia, Brazil, Chile, Paraguay, and Uruguay. To date, some $207 million have been invested in this effort, with emphasis on insecticide spraying and improved housing. In Brazil, triatomine-infested municipalities have dropped from 711 to 83; in Chile and Uruguay, countrywide infestation is down 90%; and in Argentina, house infestations have been cut by 75%.

"Of the 205 million people in Latin America, four to five percent are infected with Chagas' disease," says Dr. Schmunis. "It ranks very high in the group of diseases causing loss of life and disability, just behind acute respiratory infections, diarrheal diseases, and HIV/AIDS." PAHO estimates that 18 to 21 million Latin Americans are now infected, including two to three million who have already developed chronic complications and about 43,000 who will die this year. Most people are unaware that they are infected; 10 or even 20 years later, they develop incurable lesions in the heart, intestines, or nervous system. A recent health survey in Honduras found infections in some 300,000 people, 20% of whom are expected to die. Chagas' disease can also be transmitted through blood transfusions and from mother to child, but PAHO is working to screen blood donors throughout Latin America. Today blood screening is mandatory in many Central and South American countries. "All people donating blood are tested for Chagas' and the prevalence among donors is down to 1.2 percent," says Dr. Fabio Zicker, a PAHO epidemiologist, although prevalence in the general population is still high in some countries.----epsteind@paho.org

New England and Mid-Atlantica Lead U.S. as Lyme Disease Incidence Increases Sharply During 1996 - 12,669 cases of Lyme disease were reported to the Centers for Disease Control and Prevention by 43 states, New York City, and the District of Columbia for the period 1 January to 16 November 1996, compared with 9,932 cases reported by 44 states, NYC and DC during the same period in 1995. This represents a 27.6% increase in reported cases and is the largest number of cases ever reported to CDC in this time period. The increase is accounted for entirely by greater numbers of cases reported from the states of New England and the Mid-Atlantic region. The greatest increase in reporting was seen in New England, 3,782 cases vs. 1,901 cases (a 99.0% increase), which affected every state in the region. Increases were especially striking for Connecticut (2,883 vs. 1,411), Rhode Island (471 vs. 297), and Massachusetts (316 vs. 135). The Mid-Atlantic region reported 7,692 cases in 1996 vs. 6,503 cases in 1995 (an 18.2% increase), with the greatest increases registered by Pennsylvania (1,621 vs. 1,190) and upstate New York (3,948 vs. 3,294). Anecdotal reports of increased wetness in New England and Mid-Atlantica during 1996, and increased numbers of *Ixodes scapularis*, may be related to this jump in case reports.----Lyme Disease Surveillance Summary 7(2): 1, NOV 96.

Person-to-Person Transmission of Hantavirus? -

Researchers in Argentina may have found the first cases of human-to-human transmission of hantavirus, an often deadly agent normally transmitted only by rodents. The cases are part of an outbreak that started in September 1996 in and around the Andean town of El Bolsón, where a score of people have been infected with hantavirus and half have died. Brian Hjelle, a hantavirus specialist at the University of New Mexico, recently visited the outbreak area and says that there are "several cases that are incredibly hard to explain except by person-to-person spread." The most striking involves a 13-year-old girl who had not been near the disease area but may have acquired virus after joining her parents, both of whom had been infected in El Bolsón. Investigators at the Carlos G. Malbran Institute in Buenos Aires, the country's primary center for infectious disease research, have published additional anecdotal data suggesting that hantavirus may have been passed from person to person. Hjelle and C.J. Peters, chief of the special pathogens branch at the U.S. Centers for Disease Control and Prevention, hope to collaborate with Malbran scientists to confirm these reports. They especially want to obtain DNA "fingerprints" of local strains of the virus and track the route of infection.----Science 275(5300): 605; 31 JAN 97.

List of Recognized Hantaviruses - Dr. Brian Hjelle, M.D., University of New Mexico, has compiled an unofficial list of the hantaviruses of the world, distributed gratis via ProMED. We reproduce this list, in abbreviated form, below. Each virus name (many are known only from sequence data and are not recognized by the International Committee on Taxonomy of Viruses) is followed by its abbreviation, the Latin names of principal hosts, a statement describing host range, the source of the original isolation, and an abbreviated indication of disease, if known (HFRS =hemorrhagic fever with renal syndrome, HPS =hantavirus pulmonary syndrome, NE = nephropathia epidemica). Anyone wishing to add to or correct this list should contact Dr. Charles H. Calisher at ccalisher@vines.colostate.edu

Summary of Known and Proposed Hantaviruses (Bunyaviridae: *Hantavirus*)

Hantaan: HTN; *Apodemus agrarius*; central Europe to Lake Baikal, south to Thrace, Caucasus, and Tien Shan Mountains, Amur River through Korea to eastern Xizang and eastern Yunnan, western Sichuan, Fujian and Taiwan, and Cheju-do; Korea; HFRS.
Seoul: SEO; *Rattus norvegicus, R. rattus*; cosmopolitan; Korea; HFRS.
Dobrava/Belgrade: DOB; *Apodemus flavicollis*; England and Wales, northwestern Spain, France, the Netherlands, Denmark and southern Scandinavia through European Russia to the Urals, southern Italy, the Balkans, Syria, Lebanon and Israel; Slovenia and the former Yugoslavia; HFRS.
Puumala: PUU; *Clethrionomys glareolus*; western Palearctic from Britain and southwestern Ireland, France and Scandinavia to Lake Baikal, south to northern Spain, northern Italy, the Balkans, western Turkey, northern Kazakhstan, and the Altai and Sayan Mountains; Finland; HFRS/NE.
Sin Nombre: SN; *Peromyscus maniculatus*; Alaska panhandle across northern Canada, south through most of the continental USA, except the Southeast and the eastern seaboard, to southernmost Baja California Sur and northcentral Oaxaca, Mexico; New Mexico and California; HPS.
Black Creek Canal: BCC; *Sigmodon hispidus*; southeastern USA from southern Nebraska to central Virginia south to southeastern Arizona and peninsular Florida, interior and eastern Mexico through Central America to central Panama, and northern Colombia and Venezuela; Florida; HPS.
Muleshoe: MULE; *Sigmodon hispidus* (sequence only); see Black Creek Canal; west Texas; unknown.
New York: NY; *Peromyscus leucopus*; central and eastern USA, excluding Florida, northward to southern Alberta and southern Ontario, Quebec and Nova Scotia, southward to northern Durango and along Caribbean coast to Isthmus of Tehuantepec and northwestern Yucatan Peninsula; New York; HPS.
Bayou: BAY; *Oryzomys palustris*; southeastern Kansas to eastern Texas, eastward to southern New Jersey and peninsular Florida; Louisiana; HPS.
Thottapalayam: TPM; *Suncus murinus*; Afghanistan, Pakistan, India, Sri Lanka, Nepal, Bhutan, Burma, China, Taiwan, Japan, continental and peninsular Indomalayan Region; India; unknown.
Tula: TUL; *Microtus arvalis*; central and northern Spain through Europe to western margin of Black Sea, northeast to Kirov region of Russia; Russia; unknown.
Thai: THAI; *Bandicota indica*; Sri Lanka, peninsular India and Nepal, Burma, southern China, Taiwan, Thailand, Laos, and Vietnam; Thailand; unknown.
Prospect Hill: PH; *Microtus pennsylvanicus*; central Alaska to Labrador, Newfoundland and Prince Edward Island, south in Rocky Mountains to northern New Mexico, in Great Plains to northern Kansas, in

Appalachians to northern Georgia; Maryland; unknown.
Bloodland Lake: BLLL; *Microtus ochrogaster* (sequence only); east-central Alberta to southern Manitoba, south to northern Oklahoma and Arkansas, eastward to central Tennessee and westernmost West Virginia; Missouri; unknown.
Isla Vista: ISLA; *Microtus californicus* (sequence only); Pacific Coast from southwest Oregon through California to northern Baja California, Mexico; California; unknown.
El Moro Canyon: ELMC; *Reithrodontomys megalotis* (sequence only); south-central British Columbia and southeastern Alberta, Canada, west and north-central USA, south to northern Baja California and through interior Mexico to central Oaxaca; California; unknown.
Khabarovsk: KBR; *Microtus fortis*; Transbaikalia and Amur region south through Nei Mongol and eastern China to lower Yangtse Valley and Fujian; Russia; unknown.
Rio Segundo: RIOS; *Reithrodontomys mexicanus* (sequence only); southern Tamaulipas and west-central Michoacan, Mexico, south through Central American highlands to western Panama, Andes of western Colombia and northern Ecuador; Costa Rica; unknown.
Rio Mamore: RM; *Oligoryzomys microtis* (sequence only); central Brazil south of Rios Solimões-Amazon, and contiguous lowlands of Peru, Bolivia, Paraguay, and Argentina; Bolivia; unknown.
Andes: no abbreviation; host unknown (sequence only); distribution unknown; Argentina (human-derived); HPS.
Topografov: TOP; *Lemmus sibiricus*; holarctic, from White Sea, western Russia, to Chukotski Peninsula, northeastern Siberia, and Kamchatka, including Nunivak and St. George Islands in the Bering Sea, and from western Alaska east to Baffin Island and Hudson Bay, south in the Rocky Mountains to central British Columbia; Siberia; unknown.

E-MAIL TRAIL

E-MAIL TRAIL. This is a new feature of the TIB and includes selected excerpts of recent e-mail traffic, forwarded to DPMIAC from various sources, that relate to interesting trends and developments in medical entomology or IPM. Contributions, suggestions and comments from our readership are welcome - COL Lawyer <lawyerpg@acq.osd.mil>

9 January 1997
From: An Associated Press report (D.Q.Haney, Medical Editor)
Through: <Finchley@aol.com>
Via: ProMED-mail <promed@usa.healthnet.org>

An experimental vaccine is showing promise against malaria, still one of the world's biggest killers. Malaria claims 2.7 million lives annually and has proved to be an exceptionally difficult target for vaccines. Last September, doctors were disappointed to learn of the failure of [the SP66] malaria vaccine when tested on more than 1,300 children at a refugee camp in Thailand. Now, scientists from SmithKline Beecham Biologicals have created a new vaccine that combines proteins from the parasite and from the hepatitis B virus. If the vaccine is efficacious, it will protect against both diseases. The vaccine was tested by Dr. Jose A.Stoute and others on volunteers at the Walter Reed Army Institute of Research in Washington. . . . Dr. Stoute said the latest vaccine has been under development for about a decade, and earlier versions did not prove to be more than 25% effective. "Now we have a vaccine that offers much more reasonable efficacy with the potential for over 80 percent protection in a small group of volunteers," he said. . . . The researchers described experimental use of three formulations of the vaccine on 46 people who had never been exposed to malaria. The volunteers received three shots and then were [fed on by] malaria-infected mosquitoes. Among seven who received the most promising version of the vaccine, only one got malaria.

4 February, 1997
From: El Diario de Hoy (one of San Salvador's largest newspapers)
Via: ProMED-mail <promed-edr@usa.healthnet.org>
Translated by: N.Komar <nkomar@hsph.harvard.edu>

Ministry of Health officials have declared an alert for malaria in the western regions of El Salvador. In January 1997, 150 cases were treated in hospitals, a 44% increase over last year. According to Dr Enrique Angulo, Director General of Health, 20% of the cases were imported by travelers entering the country from Nicaragua and Honduras, where malaria has caused serious problems near the Salvadoran border. No

malaria has been reported from San Miguel, the largest city in eastern El Salvador. Malaria is endemic in El Salvador, with more than 5,000 cases reported last year. A domiciliary fumigation campaign is targeting anopheline mosquitoes, the vectors of the disease. (Translator's note: The presumed vector in El Salvador is *Anopheles albimanus*.)

4 February 1997
From: Joost Hoppenbrouwer <joost@zamnet.zm>
Source: The Daily Mail, Zambia (newspaper) <zadama@zamnet.zm>
Via: ProMED-mail <promed-edr@usa.healthnet.org>

The situation in Namwala (Zambia), where bubonic plague has claimed 30 lives in the past few weeks, has stabilized, with no more deaths being recorded, Ministry of Health spokesman Dr. Ben Phiri said yesterday. Dr. Phiri said the situation had been contained after an initial high death rate because of wrong medication that was applied to patients in the early stages of the disease's outbreak . He said the local health staff in the area had initially thought the disease was a sexually transmitted one and applied wrong drugs. "The situation however changed when a proper diagnosis of the disease was carried out by the laboratory staff from Lusaka, and we have not recorded any deaths since we started applying the correct drug," he said. Namwala entry and exit points now have medical personnel manning them and ensuring that the disease does not spread. Dr. Chirwa explained that only the bubonic plague, which manifests in swollen glands, has been recorded in Namwala; he corrected the notion that other forms of plague have been identified.

4 February 1997
From: Matti Maimets <Matti.Maimets@ut.ee>
Via: ProMED-mail <promed@usa.healthnet.org>
Subject: Tularemia, 1996 - Estonia

In 1996, 24 cases (1.6 per 100,000 population) of human tularemia were reported in Estonia. All but one of the patients lived or visited the Prangli Island of the Baltic Sea. Clinically all patients had [the] ulceroglandular form of the disease involving either inguinal or axillary lymph nodes. The ulcer was located on calves and arms. . . Occasionally, the papule was on the cheeks and the submandibular nodes [were] swollen. The disease had sudden onset with fever. Diagnosis was verified serologically. All patients recovered with streptomycin or doxycycline. The ulcers healed within 1-1.5 months. What remains unknown is the vector of the disease. Generally ticks are held to be the vector and tabanids can contribute to the incidence of the disease. In Sweden, the mosquito *Aedes cinereus* has been shown to transmit the disease to humans. All cases occurred between August 31st and September 10th. As ticks are active from March to October and the other tick-borne diseases (tick-borne encephalitis and Lyme disease) are reported during [the entire] period, this does not fully explain [the] timing of the disease onset. [Only one of the patients] could recall a tick bite. At 59 degrees north latitude, only one species of tabanid, *Haematopota pluvialis*, is active in August and September. *Aedes cinereus* becomes active at the same time. The risk for visitors to Estonia should be minimal unless one intends to visit a few islands at the Northern coast of the country.

5 February 1997
From: Luiz Jacintho da Silva <luisjs@correionet.com.br>
Via: ProMED-mail <promed-edr@usa.healthnet.org>

According to Correio Popular (a regional Campinas-southeast Brazil-respected newspaper), the Brazilian Minister of Environment acquired classical dengue while vacationing in Recife (sea-side metropolitan capital of the northeastern state of Pernambuco). Onset is said to have occurred January 1997. The newspaper also informs that 155,000 cases of dengue were reported in Brazil in 1996, 66.5% of these in northeastern states. Infestation by *Aedes aegypti* is widespread in Brazil and outbreaks of dengue have been occurring since 1982, when it was introduced after a long absence.

10 February 1997
From: Dave Coder <dave@nucleus.immunol.washington.edu>
Via: ProMED-mail <promed-edr@usa.healthnet.org>
Subject: Dengue-Venezuela (Caracas)

During the last week of January (1997), 91 cases of dengue were reported (44 classic dengue and 47 hemorrhagic dengue). Most cases (39) were reported in the parish of El Valle of the Federal District with others in Coche, Santa Rosal and San Augustin. An epidemiological alert was decreed in the Caracas metropolitan area. The Chief of Epidemiology of the Federal district reported that for the first time this year the number of reported cases exceeded the expected number and therefore was sufficient to declare an emergency. Because of prolonged rainfall, a resurgence of dengue is predicted in Caracas this year. Appropriate measures will be taken to reduce

the transmission by controlling mosquitoes in areas where most of the cases have been reported.

11 February 1997
From: Luiz Jacintho da Silva
<luisjs@correionet.com.br>
Via: ProMED-mail <promed-edr@usa.healthnet.org>
Subject: Malaria - Brazil (Eastern Amazon Region)

According to the Feb 11 edition of "Estado de São Paulo (a respected São Paulo-based national Brazilian newspaper), an outbreak of malaria has been occurring in the municipality of Anajas, on the coastal island of Marajo, in the mouth of the Amazon River. Of a population of 14,671, there were 7,127 cases in 1996, 201% more than in 1995. Cases are due to *Plasmodium vivax* and *P. falciparum*, and 12 deaths were reported recently. The outbreak is seen as a consequence of the closure of a number of timber operations in the region, since when many workers have turned to collecting "palmito" (heart of palm) in the forest. Malaria cases in Brazil have maintained a level of 500,000 to 600,000 notified cases a year, 95% of them in the Amazon Region, in the last 10 years, up from 50,000/yr. in 1971. Chloroquine-resistant *P. falciparum* is widespread.

14 February 1997
From: Dr. James Chin, CDPC E-mail Service
<jchin@cdpc,com>
Via: ProMED-mail <promed-edr@usa.healthnet.org>

Typhus epidemics sweeping through camps in Burundi: WHO announced on Friday (February) that typhus epidemics, apparently louse-borne, are sweeping through camps in four provinces of Burundi for displaced and "regrouped" people. The typhus rate soared in October (1996) when troops began "regrouping" villagers in camps, officially to protect them from Hutu rebels. An estimated 400,000 to 500,000 people, mainly of the Tutsi minority, who were displaced by fighting in the last three years live in camps protected by the army in Burundi. In addition 200,000 Tutsis and Hutus had been regrouped in camps in three provinces by the army since October. The troops forced the mainly Hutu peasants out of their homes in the hills and into the camps.

16 February, 1997
From: Luiz Jacintho da Silva
<luisjs@correionet.com.br>
Via: ProMED-mail <promed-edr@usa.healthnet.org>
Subject: Malaria in South Africa

The Panafrican News Agency reported on February 12, 1997 that South African health authorities are concerned about the increase in malaria, 3 times higher in 1996 than in 1995. The constant influx of refugees from neighboring countries is held as the main cause for the increase. In 1996, approximately 30,000 cases were reported. In January 1997, 2,600 cases were reported, a 20% increase over January 1996. Authorities are concerned about the potential for a general malaria outbreak in the country.

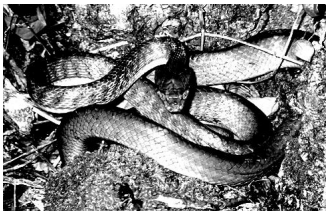
NATURAL RESOURCES

Courses of Interest - "Advanced Landscape Plant IPM Short Course" at the University of Maryland. This is an excellent course for landscape managers, golf course superintendents, pest managers, and natural resources professionals. Emphasis is placed on monitoring, use of horticultural oil, beneficials, and biocontrol agents. The State of Maryland will recertify a state-certified pesticide applicator in category 3 upon successful completion of this course. Cost is $600 for lecture only or $900 with laboratory. The laboratory is well worth the extra outlay.

This course is a companion to the "Advanced Turfgrass IPM Short course," also taught by the University of Maryland, an excellent blend of Agronomy, Weed Science, Plant Pathology, and Entomology. Cost is $550 for lecture only or $650 with laboratory. Both courses are offered each January. Contact Jennifer Lyons-Carter at 301- 405-3913 to be placed on the mailing list for the January 1998 courses. .----Pete Egan.

Mosquito ID Certification, April 7-18, is taught by Dr. Richard Darsie of the Florida Medical Entomology Laboratory. Fax Charlie Morris at 561-778-7204 to reserve a space or receive a brochure. Cost is $400.

Brown Tree Snake (BTS) - Dr. Peter Egan, AFPMB, recently visited Guam to review the BTS program



being conducted there under contract to DoD by Animal Damage Control (ADC). Dr. Egan met with senior Navy, Air Force, and government of Guam officials to discuss issues of concern and cooperation provided by each organization to ADC staff. The Navy has recently furnished a new office/kennel building; four dogs will

be housed at this facility. The Air Force at Andersen Air Force Base (AAFB) has provided a large building used for offices and storage. ADC has kept their detector dogs at the Air Force working dog kennel. After the transfer of four dogs to the Naval Station facility ten dogs will still be kenneled at AAFB.

Dr. Richard Engeman, National Wildlife Research Center (NWRC), Fort Collins, CO was also visiting Guam. NWRC is under contract to evaluate the effectiveness of the ADC program. DrEngemean has a number of projects and manuscripts in preparation; however, his preliminary results indicate that the ADC trapping and detection program has been effective in reducing BTS numbers in and around high risk shipping and handling facilities.

At the time of our visit preparations were under way by ADC to provide support to Tandem Thrust, a major training exercise.

ADC has made much progress since inception of the BTS program 3½ years ago. A highly motivated and dedicated staff under the direction of Mr. MikePitzler has been responsible for the success of the program.----PeteEgan.

TIB BYTES

AFPMB Web Site Face Lift. The World Wide Web site at the AFPMB is getting a face lift. All the pages are undergoing modifications that will change their appearance and, in some cases, change how they function. An effort is being made to preserve many of the page names and locations so that users who have created bookmarks on theirbrowsers will still be able to use them. The revised web pages will most likely be in use by the time this TIB is distributed. Our WWW address is **http://www-afpmb.acq.osd.mil/** ---- LCDR Corneil.

New Feature Added to DPMIAC Internet Literature Abstract Search Site. A new feature has been added to the DPMIAC Internet Literature Abstract Search Site. Now, when the results of a search are displayed, an additional button at the top of the page will appear. Clicking on the "List All Abstracts" button will rerun the search, only this time the abstract files are opened and displayed together on the same page. This allows all the abstracts to printed at one time versus opening them one at a time in order to view and print them.

A few notes on forming a query. There are a number of fields that can be used in performing a search of the literature abstracts. The field names are: abstract, accession, authors, keywords, source, title, and type. These represent the various types of information that are present for each of the articles in the database. Each of these fields or a combination of them can be used in constructing a search. For example, suppose all articles written by Smith in the year 1985 are desired. The query string that would be entered on the search page would look like:

IN authors{smith} AND IN source{1985}

The IN field_name{word} is the basic format for searching only information contained in a particular field. Boolean type combinations can also be used within the {} of the field search. For example, to find abstracts written byRobbins that have the keywords (TICK AND RODENT) OR IXODES would look like:

IN authors{robbins} AND IN keywords{(tick AND rodent) ORixodes}

The fields can be combined with a search for text found anywhere within the abstract. For example, searching for abstracts that have the words "integrated pest management" anywhere within the text and have the keyword "tick" would look like:

integrated pest management AND IN keywords{tick}

A list of the keywords that are used in creating the abstracts in this database will soon be available for viewing from the literature abstract web site. The WWW address for this site is: **http://134.152.11.41/LRS/**---- LCDR Corneil

TIB BITS

SLE in Whales. Just when you thought it was safe to go back in the water. The following, from the

February 1997 issue of the Florida Mosquito Control Association's "Buzz Words," stems from an article by Buck et al., published in *Clinical and Diagnostic Virology* (1993): "A mature killer whale presented (?at Sea World, FL) with reduced appetite, rapidly became lethargic and subsequently died. SLE virus was isolated from its brain, kidney and lung tissues. This represents the first isolation of SLE from a marine animal." I

wonder how long the mosquito had to hold her breath to take that blood meal. ---- COL Lawyer, DPMIAC.

Evidence of Gulf War Syndrome? The following is taken from a "Random Sampler" in the 17 January 1997 issue of Science. Three studies released at a Washington, DC press conference early in January suggest that symptoms reported by some Gulf veterans may stem from exposure to certain combinations of chemicals. The findings are at odds with those of another report, issued during the same week, by a White House panel, which concluded that stress may be the main culprit.

The three studies, led by epidemiologist Robert Haley of the University of Texas Southwestern Medical School in Dallas, examined 249 Navy reservists who served in the Gulf. Sixty-three (25%) reported symptoms falling into three categories: memory and sleep problems; confusion and dizziness; and muscle pains and fatigue. These "syndromes," say the researchers, correlated with a combination of side effects from the anti-nerve gas agent pyridostigmine bromide (PB), insecticide exposure, and/or possible exposure to chemical weapons. Tests of brain structure and nerve function in 23 afflicted vets showed significantly more abnormalities than in a group of 20 healthy vets.

The researchers say the syndromes resemble "delayed neuropathy," caused by organophosphate pesticides. In prior research they showed that high-dose cocktails containing PB and two insecticides caused nerve damage in chickens.

"Yes, there is a Gulf War syndrome. In fact, there appear to be several," says George Lundberg, editor of the *Journal of the American Medical Association*, which published the studies on 15 January. But others aren't convinced. The subjects were volunteers, they came from the same unit, and only a few were tested, notes White House panel member Philip Landrigan of Mount Sinai School of Medicine in New York City. Says epidemiologist John Bailar of the University of Chicago: "Many people have come up with plausible hypotheses that failed under further study. . . . It is way premature to get excited about this one."

World Directory of Arthropod Vector Research and Control Specialists. This directory, published in cooperation with the American Mosquito Control Association and the Society of Vector Ecologists, was last published in 1990. It contains useful listings, by country, of vector control specialists with their areas of specialization, professional affiliations and other pertinent information. If you wish to update your entry in the Directory or be included for the first time, complete and submit the form located at the back of this issue. Questions concerning the World Directory should be directed to Dr. Eugene Gerberg at (352) 373-7384. ---- COL Lawyer, DPMIAC

PUBLICATIONS OF INTEREST

AFPMB Technical Information Memorandum No. 36. - Personal Protective Techniques Against Insects and Other Arthropods of Military Significance. This Technical Information Memorandum (TIM) was adapted from U.S. Army Environmental Hygiene Agency (USAEHA) Technical Guide No. 174, by the same title, through the efforts of the AFPMB Repellents Committee and the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM). It provides preventive medicine information and guidance to DoD personnel who may come in contact with nuisance or disease-carrying arthropods, or who are responsible for protecting the health of such personnel. It describes the DoD Insect Repellent System and other techniques that provide maximum, safe protection from arthropod attack, including the use of protective clothing and equipment, repellents, pesticides, and other strategies. If you have not already received a copy and desire one, check the appropriate box on the last page of this TIB. ---- COL Lawyer

Manual of Techniques in Insect Pathology. L.A. Lacey (Ed.). A great number of techniques for the isolation, identification, production and evaluation of insect pathogens are scattered throughout the literature. However, a single comprehensive manual of techniques in insect pathology has heretofore not been available. In this manual, an international group of experts has brought together a broad array of techniques for the identification, isolation, propagation/cultivation, bioassay and storage of the major groups of entomopathogens. The volume will be spiral bound and the publication date is 21 February 1997. Ordering information is as follows:

ISBN 0-12-432555-6
US and Canada: $110 (US dollars)
Call toll free: 1-800-321-5068
Fax: 1-800-874-6418
E-mail ap@acad.com
Web site: http://www.apnet.com/
Academic Press
Marketing Department
525 B Street, Suite 1900
San Diego, CA 92101-4495

American Lumber Standards Committee, Incorporated (ALSC) has sent a copy of each of "ALSC Agencies Typical Grade Stamps" and "Accredited Agencies for Supervisory and Lot Inspection of Pressure Treated Wood Products and Typical Quality Marks". These lists can be most helpful to individuals involved in quality assurance programs. With these two publications as a guide, questions regarding the grade and treatment of a piece of lumber or treated wood product can be quickly determined. Circle the box on the back page and mail to DPMIAC for a copy. ----Pete Egan.

The Western Wood Preservers Institute and the Canadian Institute of Treated Wood have produced "Best Management Practices for the Use of Treated Wood in Aquatic Environments."
The publication contains BMPs for Specifying Materials, Creosote, CCA, ACZA and ACA, ACQ, Dual Treaed Marine Piling, Copper Naphthnate, Pentachlorophenol, Quality Control and Product Assurance, Environmental Considerations for Using BMP Treated Wood in Aquatic Projects. Circle the box on the back page and mail to DPMIAC for a copy. ---- Pete Egan

Weed Management The October issue of The IPM Practioner has a major article on Integrated Management of Gorse *Ulex europaeus*, also called furse or Irish furze. This is a spiny exotic evergreen shrub resembling Scotch broom *Cytisus scoparius and* has become a major pest of agriculture and forestry on the West Coast.

DPMIAC has also received a copy of "Biological Control of Musk Thistle in Kansas." published by the Cooperative Extension Service , Kansas State University, Manhattan, KS. ----Pete Egan.

Proceedings of the North American Termite Biology and Control Conference, Nassau, Bahamas, June 3 to June 6, Sociobiology Vol. 28, No.3, 1996. There are a number of interesting articles about termites in this issue. Individuals with a strong interest in controlling termites should read some of these articles to find out the latest.

Also for the termite control buff is an article entitled "Termite Control May Call for a Combo of Treatment Techniques", Pest Control, December 1996, 42-47. A good article that reviews the success of chemical control of termites, but says now it is time to move on. The program emphasized by Jim Ballard is an IPM approach (I've always felt IPM should stand for Intelligent Pest Control). Ballard describes seven steps in the approach; inspection, moisture management, food management, termiticides, termiticide foams, termite baits, and physical barriers. When you stop and think about it, what you do when you have a problem is to stop and think about what is really the problem and what is the symptom and treat the problem and not the symptoms. For example peeling paint may indicate that you may need to repaint, but first you may have to solve the moisture problem before repainting. The same issue is true with termite control, not too mention many other pest problems.

The February issue of "Pest Control Technology" is devoted to Termite Control.---- Pete Egan.

Air Force Model Pesticide Reduction Plan - DPMIAC has about 30 copies of this plan, prepared by Earth Tech, Inc., for the Air Force Materiel Command and released in July of last year. To obtain a copy, please fill out the request form at the back of this TIB and return it to DPMIAC.

SELECTED MEETINGS

MARCH 18-21. 154th Meeting, Armed Forces Pest Management Board- Washington, DC. Col Bob McKenna, AFPMB, Forest Glen Sect., WRAMC, Washington, DC 20307-5001, Tel: (301) 295-7476, Fax: 7473, DSN Prefix 295, e-mail: **mckennrj@acq.osd.mil**

MARCH 23-27. American Mosquito Control Association Annual Meeting - Salt Lake City, UT. Tel: (800) 453-9450.

APRIL 6-8. Fourth International Symposium on Ectoparasites of Pets - Riverside, CA. Dr. N.C. Hinkle, Department of Entomology, University of California, Riverside, CA 92521, Tel: (909) 787-2422, e-mail: **nhinkle@citrus.ucr.edu**

MAY 5-9 . First World Congress on Leishmaniasis - Istanbul, Turkey. Organized by the Turkish Society of Parasitology in collaboration with the Gulhane Military Medical Academy, Department of Microbiology & Clinical Microbiology and Ege University Medical Faculty, Department of Parasitology, under the auspices of the World Federation of Parasitologists. Corresponding addresses: Worldleish 1, Department of Parasitology, Ege University Medical Faculty, Bornova, Izmir, 35100, Turkey or Turkish Society for Parasitology, P.K:81, Bornova, Izmir, 35042, Turkey; Phone: +90 (232) 339-8290; Fax: +90 (232) 388-1347; e-mail: **parasite@tipfak.ege.edu.tr**; Home page: **http://medicine.ege.edu.tr/parasitology**

MAY 12-16. Current Concepts in Environmental and Operational Medicine - Sheraton Tara Hotel, Framingham, Massachusetts. Sponsored by the U. S. Army Research Institute of Environmental Medicine. Point of Contact: LTC Bob Burr (**burr@natick-ccmail.army.mil**)

JUNE 2-6. 27TH Annual Environmental Science and Engineering Practices Workshop - 6H-F15 - Atlanta-Decatur Hotel and Conference Plaza, Atlanta, Georgia. Sponsored by the U.S. Army Academy of Health Sciences. Point of Contact: ATTN: MCCS HPE CPT Evans, 3151 Scott Road, Suite 1138, Fort Sam Houston, TX 78234-6142.

JULY 15-18. 155th Meeting, Armed Forces Pest Management Board - Washington, DC. Col Bob McKenna, AFPMB, Forest Glen Sect., WRAMC, Washington, DC 20307-5001, Tel: (301) 295-7476, Fax: 7473, DSN Prefix 295, e-mail: **mckennrj@acq.osd.mil**

AUGUST 18-22. Second Global Meeting on Parasitic Diseases with a Focus on Malaria - Hyderabad, India. Organized by the Indian Society of Parasitology in celebration of the 100th anniversary of Sir Ronald Ross's discovery of the malarial parasite. Corresponding address: Dr. V. P. Sharma, President, Indian Society of Parasitology and Director, Malaria Research Centre, 20, Madhuban, Vikas Marg, Delhi - 110 092, India; Phone: +91-11-224-7983 or 224 3006; Home: +91-11-688-5195; Fax: +91-11-221-5086 or 723-4234; e-mail: **Ross@icmrmrc.ren.nic.in**

OCTOBER 19-24 Second International Congress of Vector Ecology. The Society for Vector Ecology is sponsoring the Second International Congress of Vector Ecology in Orlando, Florida. The Congress will be held at the Holiday Inn International Drive Resort. For further information and registration materials contact Gilbert L. Challet, Secretary-Treasurer, P.O. Box 87, Santa Ana, CA 92702, USA Tel: (714) 971-2421, Ext. 148, Fax: (714) 971-3940.

OCTOBER 19-25. Pest Management 97, sponsored by the National Pest Control Association - Minneapolis, MN. NPCA Meetings Department, 8100 Oak Street, Dunn Loring, VA 22027, Tel: (800) 678-6722 or (703) 573-8330.

NOVEMBER 18-21. 156th Meeting, Armed Forces Pest Management Board - Washington, DC. Col Bob McKenna, AFPMB, Forest Glen Sect., WRAMC, Washington, DC 20307-5001, Tel: (301) 295-7476, Fax: 7473, DSN Prefix 295, e-mail: **mckennrj@acq.osd.mil**

DECEMBER 13-18. Entomological Society of America Annual Meeting - Nashville, TN. Tel: (301) 731-4535, Fax: 4538, e-mail: **meet@entsoc.org** Information is also available on the World Wide Web: **http://www.entsoc.org./**

COURSES FOR DoD PEST MANAGEMENT PERSONNEL

If you see any information that needs to be corrected or updated, please contact LCDR Corneil, who can be reached at Tel: (301) 295-7479, DSN Prefix 295 or e-mail: **cornelja@acq.osd.mil**

ARMY SPONSORED COURSES

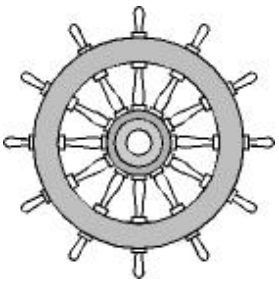
1. For information on the following courses, contact SSG Sutton, Academy of Health Sciences, U.S. Army, ATTN: MCCS-HPM, Fort Sam Houston, TX 78234-6100, Tel: (210) 221-5270/4278, DSN Prefix 471. Classes are conducted at Fort Sam Houston, TX.

Pest Management Certification Course (6H-F12/322-F12):
24 MAR -11 APR 97
2-20 JUN 97
4-22 AUG 97
Recertification (6H-F13/322-F13):
21-25 APR 97
25-29 AUG 97

2. For information on courses in Germany, contact MAJ Tom Logan, HQ, USACHPPM-EUR, CMR 402, Box 137, APO AE 09180, Tel: 49-6371-86-8540/44, DSN: 486-8540/44. Classes are conducted at the USACHPPM-EUR,Landstuhl, Germany.

3. For information on courses taught at the Environmental Training Center, contact Ms. Gail Boeff, ATTN: ATZR-BT, Fort Sill, OK 73503-5100, Tel: (405) 351-2111, Fax: (405) 351-5722, DSN Prefix 639. The Environmental Training Center at Fort Sill, OK conducts a variety of environmental, natural resources and occupational health courses.

NAVY SPONSORED COURSES



1. For information on the following courses, contact Mr. F. De Masi, NDVECC, Naval Air Station Jacksonville, Box 43, Jacksonville, FL 32212, Tel: (904) 772-2424, Fax: (904) 779-0107, DSN Prefix 942. Classes are conducted at the Disease Vector Ecology and Control Center, NAS Jacksonville, Jacksonville, FL.

Medical Entomology and Pest Management Technology (B-322-1050):
2-13 JUN 97
14-25 JUL 97

Pesticide Applicator Training (Core) (B-322-1070), Instruction for Initial Certification:
3-10 MAR 97
8-15 SEP 97

Plant Pest and Vegetation Management (B-322-1071), Initial Certification for Categories 2, 3, 5 & 6:
11-14 MAR 97
16-19 SEP 97

Arthropod and Vertebrate Pest Management (B-322-1072), Initial Certification for Categories 7 & 8:
17-26 MAR 97
22 SEP - 1 OCT 97

Recertification Course (B3221074), Category 8:
8-9 APR 97
4-5 NOV 97

Operational Entomology Training (B-322-1077), designed for A/D & Reserve PMTs, EHOs, Entomologists, Epidemiologists & others assigned to PM units:
5-16 MAY 97
20-31 OCT 97

2. For information on the following courses, contact HM1 Clayton, NDVECC, 19950 Seventh Ave., NE, Ste. 201, Poulsbo, WA 98370-7405, Tel: (360) 315-4450, Fax: 4455, DSN Prefix 322. Classes are conducted at the Disease Vector Ecology and Control Center, Bangor, WA.

Pest Management (Core): Basic Pest Management Technology (B-322-1070), designed for military and civilian personnel engaged in pest control operations at military activities. Includes Plant and Vegetation Management (B-322-1071) and Arthropod and Vertebrate Pest Management (B322-1072).
27 JAN - 21 FEB 97

Medical Entomology and Pest Management Technology for Preventive Medicine Technicians (B-322-0017):
17 MAR - 11 APR 97
21 JUL - 15 AUG 97
6 NOV - 5 DEC 97

Medical Entomology and Pest Management Technology (Reserve Training) (B-322-1050):
16-27 JUN 97
8-19 SEP 97

Recertification Course (B322-1074), Category 8:
4-7 MAR 97
20-23 MAY 97
26-29 AUG 97
21-24 OCT 97

Operational Entomology Training (B-322-1077), designed for A/D & Reserve PMTs, EHOs, Entomologists, Epidemiologists & others assigned to PM units:

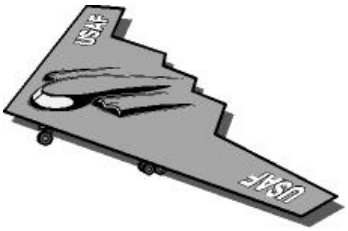
21 APR - 2 MAY 97 (atOkinawa, Japan)

Shipboard Pest Management (B-322-1075): NDVECC(B)
19 MAR 97
9 APR 97
7 MAY 97
4 JUN 97
9 JUL 97
20 AUG 97
24 SEP 97
29 OCT 97
19 NOV 97
10 DEC 97

3. For more information about the following course, contact MR. Melvin Marks, Southern Division, Naval Facilities Engineering Command, P.O. Box 190010, 2155 Eagle Drive, North Charleston, SC 29419-9010, Tel: (803) 820-7019, FAX: (803) 820-7024, DSN Prefix: 583. Course is conducted at the Hilton Hotel, Cherry Hill, NJ.

Pest Control Quality Assurance Evaluator Training Course
12-16 MAY 97

AIR FORCE SPONSORED COURSES



1. For information on courses at Sheppard AFB, contact the Programs Division, 2AF/DOP, Keesler AFB, MS 39534-5000, DSN: 597-1336. For information on course content, refer to AFCAT 36-2223, USAF Formal Schools or contact: Mr. Dale Hess, 366 TS/TSIM (Training Squadron/Training Squadron, Instructional Mechanical), 727 Missile Road, Sheppard AFB, TX 76311-2254, DSN: 736-5790, Fax: 3345. Classes are conducted at Sheppard AFB, TX.

2. For information on the following course, contact Maj Terry Carpenter, USAF School of Aerospace Medicine/EH, Brooks AFB, TX 78235-5123, Tel: (210) 536-2058/59, DSN Prefix 240.

Operational Entomology Course (OEC) - #B30ZY43M3-000 is a two-week training course that includes vector bionomics and vector-borne disease profiles, surveillance and control of vectors and vector-borne diseases, and information, intelligence, and perspectives on developing country operations during exercises, hostilities, and natural disasters. Academic instruction, practical exercises and field experiences simulate actual vector-borne disease surveillance and control situations. The course is designed to provide training for the following Air Force specialties and DoD personnel: public health officers (43H1/3); public health apprentices (4E031, E-2 and above with completion of 5-level CDC and the recommendation of your supervisor), journeymen (4E051), craftsmen (4E071), or superintendents (4E091); medical entomologists (43M1/3); flight surgeons (48A1/3 or 48P1/3); pest management apprentices (3E433, E-2 and above with completion of 5-level CDC and the recommendation of your supervisor), journeymen (3E453), craftsmen (3E473), or superintendents (3E490 with a prior AFSC 3E433, 3E453, and 3E473), or equivalent civilian pest management personnel; and other military and civilian public health and pest management personnel with the consent of the faculty. Quotas are obtained through the Unit or MAJCOM Training Managers. Army and Navy personnel may contact USAFSAM/EH to request attendance in OEC and are admitted as slots become available.

12-23 MAY 97
14-25 JUL 97
18-29 AUG 97
8-19 SEP 97

3. For information on the following course, contact Dr. Terry L. Biery, 757 AS/DOSE, YARS, Vienna, OH 44473-5000, Tel: (330) 392-1111/1178, DSN Prefix 346.

Aerial Application of Pesticides (Certification) - #AAP-001 is a one-week course that addresses the tenets and methodologies for aerial application of pesticides, with an emphasis on operational aspects and military applications. The course includes general principles, legal aspects, contracts, map types and preparation, spray system calibrations, aerial spray math, DoD spray systems, meteorological effects, occupational health and safety, operations and mission support, disease control, pilot's view, private applicator's view, environmental aspects, computer modeling, swath and droplet characterization, pesticide monitoring, public relations, contingency wartime usage, spill prevention and containment, and other pertinent operational issues involving the use of

aerial spray. The course features guest lecturers from the U.S. Army, U.S. Navy, U.S. Department of Agriculture, private applicator firms, and other government agencies.

FEDERAL REGISTER

VOL 61 No 232-252 (1-31 December 1996)

2-63832 National Guard Bureau, Department of the Army - Action - Notice of Availability (NOA) - Draft Environmental Impact Statement (DEIS) for the Massachusetts Military Reservation (MMR), Cape Cod, Massachusetts; Proposed Expansion.

2-63854-57 National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce - Action - Notice of Document Availability - Notice of Availability of Final Handbook for Habitat Conservation Planning and Incidental Take Permitting Process.

3-64071-72 Department of Navy,DoD - Action - Notice of Intent to Prepare an Environmental Impact Statement and to OpenScoping for Developing Home Port Facilities for Three NIMITZ Class Nuclear-Powered Aircraft Carriers in Support of the United States Pacific Fleet.

3-64083-84 Environmental Protection Agency (EPA) - Action - Notice - Notice of Receipt of Requests for Amendments to Delete Uses in Certain Pesticide Registrations.

5-64475-81 Fish and Wildlife Service (FWS), Interior - Action - Notice of Final Guidance - Endangered and Threatened Wildlife and Plants; Final List Priority Guidance for Fiscal Year 1997.

5-64481-85 FWS - Action - Notice of Final Decision - Endangered or Threatened Wildlife and Plants (ETWP); Notice of Final Decision on Identification of Candidates for Listing as Endangered or Threatened.

5-64496-97 FWS - Action - Notice of Status Reviews - ETWP; Notice of Status Reviews for the Alexander Archipelago Wolf and Queen Charlotte Goshawk.

13-65459 Animal and Plant Health Inspection Service, USDA (APHIS) - Action - Withdrawal of a Direct Final Rule - Imported Fire Ant; Approved Treatments.

13-65573 EPA - Action - Notice - Statement of Interpretation Regarding Toxicologically Significant Levels of Pesticide Active Ingredients; Notice of Availability.

23-67493-97 FWS - Action - Notice of Final Rule - ETWP; Determination of Endangered Status for *Lesquerella Perforata* (Spring Creek Bladderpod).

24-67843-44 FWS - Action - Notice - Notice of Intent to Prepare a National Environmental Policy Act Document on the Control of Invading *Spartina alterniflora* grass on Willapa National Wildlife Refuge and Surrounding Tidelands of Willapa Bay, Pacific County, WA.

26-68035-36 EPA - Action -Draft PR Notice; Notice of Availability - Registration Policies Pertaining to Rodenticide Baits and Other Vertebrate Pesticides.

27-68260-62 EPA- Action - Notice; Notice of Receipt of Requests for Amendments to Delete uses in Certain Pesticide Registrations.

31-69065-66 FWS- Action - Notice of Status Reviews Extension of Comment Period - ETWP; Notice of Status Reviews for the Alexander Archipelago Wolf (*Canis lupus ligoni*) and Queen Charlotte Goshawk (*Accipiter gentilis laingi*).

VOL 62 No 3-21 (1-31 January 1997

6-685-689 FWS- Action - Notice of Final Rule - ETWP; Determination of Endangered Status for Three Wetland Species Found in Southern Arizona and Northern Sonora, Mexico.

10-1644-47 FWS - Action - Final Rule - ETWP; Determination of Endangered Status for the Plant *Cordia bellonis*.

10-1647-58 FWS - Action - Final Rule - ETWP; Determination of Endangered Status for the Cumberland Elkote, Oyster Mussel, Cumberlandian Combshell, Purple Bean, and Rough Rabbitsfoot.

13-1691-99 FWS - Action - Final Rule - ETWP; Determination of Endangered Status for *Juglans jamaicensis*.

13-1777-78 FWS - Action - Notice of Reopening of Comment Period and Related Public Information Workshops - Notice of Reopening of Comment Period on Draft Recovery Plan for the Wetland and Aquatic Species of the Owens Basin, Inyo and Mono Counties, California and Related Public Information Workshops.

16-2313-22 FWS - Action - Final Rule - ETWP; Determination of Endangered Status for the Laguna Mountains Skipper (*Pyrgus ruralis lagunae*) and Quino Checkerspot Butterfly (*Euphydryas editha quino*).

17-2665 Commission on Risk Assessment and Risk Management - Release of Volume 1, Framework fro Environmental Health Risk Management-January 29, 1997-Commission on Risk Assessment and Risk Management.

22-3241 FWS - Action - Final Rule; Document Availability - ETWP; Notice of Availability of Regulatory Flexibility Analysis for the Designation of Critical Habitat for the Marbled Murrelet.

22-3263 FWS - Action - Proposed Rule; Notice of Reopening of Comment Period - ETWP; Notice of Reopening of Comment Period on Proposed Endangered Status for Sixteen Plants from the Northern Channel Islands of California.

22-3284-87 EPA - Action - Notice - Notice of Receipt of Requests to Voluntarily Cancel Certain Pesticide Registrations.

23-3493-95 FWS - Action - Notice of Reopening of Public Comment Period - ETWP; Notice of Reopening of Comment Period on Reports and Other Data Pertaining to the Listing of the Bruneau Hot Springsnail (*Pyrgulopsis burrneauensis)*

24-3616-28 FWS - Action - Final Rule - ETWP; Determination of Endangered Status for Two Insects from the Santa Cruz Mountains of California.

24-3654-55 FWS - Action - Proposed Rule - ETWP; Withdrawal of Proposed Rule to List Santa Cruz Rain Beetle (*Pleocoma conjungens conjungens*) as Endangered.

28-4075 FWS - Action - Notice of Public Meeting and Extended Public Review Period for the Proposed Establishment of Clarks River National Wildlife Refuge - Notice of Public Meeting and Extended Public Review Period on the Draft Environmental Assessment and Land Protection for the Proposed Establishment of Clarks River National Wildlife Refuge, Marshall McCracken and Graves Counties, Kentucky.

29-4172-83 FWS- Action - Final Rule - ETWP; Determination of Endangered Status for Two Plants

and Threatened Status for Four Plants from Southern California.

29-4183-92 FWS - Action - Final Rule - ETWP; Determination of Endangered Status for the Northern Population of theCopperbelly Water Snake (*Nerodia erythrogaster neglecta*).

29-4229-39 FWS - Action - Proposed Rule - ETWP; Proposed Rule to List the Northern Population of the Bog Turtle (*Clemmys muhlenbergii*) as Threatened and the Southern Population as Threatened Due to Similarity of Appearance.

31-4664-66 APHIS (USDA) - Action - Proposed Rule - Imported Fire Ant; Approved Treatments.

31-4718 FWS - Action - Proposed Rule; Notice of Reopening of Comment Period - ETWP; Notice of Reopening of Comment Period on Proposed Endangered Status for the Jaguar (*Panthera onca*) in the United States.

31-4762-63 EPA - Action - Notice of Availability of Reregistration Eligibility Decision Documents; Reopening of Public Comment Period - Availability of Reregistration Eligibility Decision Documents for Comment; Certain Chemicals.

31-4874-76 FWS - Action - Final Rule - Migratory Bird Hunting; Approval of Bismuth-Tin Shot As Nontoxic for Hunting Waterfowl and Coots.

31-4877-79 FWS - Action - Proposed Rule and Notice of Availability - Migratory Bird Hunting; Temporary Approval of Tungsten-Iron Shot as Nontoxic for the 1997-1998 Season.

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❑ NO. 14, Personal Protective Equipment for Pest Management Personnel - Mar 1992
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